

What is Claimed is:

1 Apparatus for a service node used in a multimedia network comprising:  
 2 a data distributor circuit a data port for coupling with a data stream, said data  
 3 distributor circuit having a relational code for determining whether an address field of a  
 4 data packet is intended for local distribution by said distribution circuit; and  
 5 a decoder in communication with said distribution circuit, said decoder having a  
 6 virtual channel filter for filtering said address field to route said data packet to at least one  
 7 data port.

2. The apparatus of Claim 1 further comprising:

an incorporator circuit electrically-coupled to said data port to insert an address  
 value having a relational code and a virtual channel code in a data input from said at least  
 one data port, said incorporator for inserting said data input into said data stream.

3. The apparatus of Claim 2 wherein said incorporator circuit is coupled with said  
 decoder for receiving said data input.

4. The apparatus of Claim 3 wherein said incorporator circuit comprises:

a Field Programmable Gate Array executing a firmware routine for inserting said  
 address value into said data input, and for inserting said data input into said data stream.

5. The apparatus of Claim 1 wherein said data distributor circuit comprises:

a Field Programmable Gate Array executing a firmware routine for filtering said  
 data stream with respect to said relational code.

6. The apparatus of Claim 5 wherein said data stream is a data cell-based data stream  
 having a plurality of data packets.

7. A multimedia network card comprising:

a deserializer coupled to a serial data stream, said deserializer for converting said serial data stream to a parallel data stream representing a plurality of data of said serial data stream;

a receiver coupled to said deserializer, said receiver having a relational code for determining whether an address field of said parallel data stream designates local distribution;

a decoder in communication with said receiver, said decoder having a virtual channel filter for filtering said address field to route said data packet to at least one data port; and

a serializer coupled to said receiver, said serializer for converting an output data stream from said receiver into an output serial data stream.

8. The multimedia network card of Claim 7 further comprising:

an incorporator coupled to said decoder, said incorporator to insert an address value having a relational code and a virtual channel code in a data input from said at least one data port, said incorporator for inserting said data input into said data stream; and

a second serializer coupled to said receiver, said serializer for converting an output data stream from said receiver into an output serial data stream.

9. The multimedia network card of Claim 8 further comprising:

a second deserializer coupled to said incorporator and said serial data stream, said deserializer for converting a parallel data stream into a serial data stream such that said incorporator provides a redundant receiver function to said receiver.

10. The apparatus of Claim 9 wherein said incorporator circuit comprises:

a Field Programmable Gate Array executing a firmware routine for inserting said address value into said data input, and for inserting said data input into said data stream.

11. The apparatus of Claim 10 wherein said receiver comprises:

a Field Programmable Gate Array executing a firmware routine for filtering said parallel data stream with respect to said relational code.

12. The apparatus of Claim 11 wherein said data stream is a data cell-based data stream having a plurality of data packets.

13. A method of interfacing an multimedia communications data stream having a plurality of data packets, the method comprising:

- (a) inputting a data packet of the data stream;
- (b) determining whether an address field of the data packet is intended for local distribution;
- (c) routing the data packet to a data port if the data packet is intended for local distribution;
- (d) returning the data packet to the data stream if the data packet is not intended for local distribution.

14. The method of Claim 13 further comprising the steps of:

- (e) repeating steps (a) through (d) for a plurality of data packets.

15. The method of Claim 13 further comprising the steps of:

- (e) incorporating a data packet from a local data port into the data stream for transmission.